

**BIODIVERSITY CONSERVATION**

❖ **India's global initiative to save the big cats**

➤ **CONTEXT:** Five decades after India launched 'Project Tiger' to check the dwindling population of the big cats and protect their natural habitat, Prime Minister Narendra Modi recently unveiled a global alliance that will work towards the protection and conservation of six species besides the tiger — the cheetah, jaguar, leopard, lion, puma and snow leopard .

- According to the Ministry of Environment, Forest and Climate Change (MoEF&CC) the International Big Cat Alliance (IBCA) will reach out to “range” countries that are home to the seven big cats to strengthen efforts to conserve these denizens in the wild.
- The alliance will provide a platform for the member nations to share knowledge and expertise and extend support to recovery efforts in potential habitats.
- The IBCA will also assist existing species-specific inter-governmental platforms to boost conservation efforts.

➤ **How did the global alliance come into being?**

- Prime Minister first proposed an international group against poaching and illegal wildlife trade while releasing the country's tiger census report to mark Global Tiger Day in 2019.
- The PM reiterated the country's commitment towards animal protection and conservation. He highlighted the threat of a “decreasing and disturbed habitat” and illegal trade as he sought to bring together heads of government of tiger range countries in an alliance to “erase demand and firmly curb poaching and illegal trade in Asia.”
- Taking the lead, the central government set up the International Big Cat Alliance, which PM Modi has termed an “extension to the spirit” of his proposal.

➤ **What will be the role of the bloc?**

- Broadly, the alliance will focus on the protection of seven major cat species and work with countries harbouring these big cats to stop the illegal wildlife trade.
- As per preliminary information, the global bloc will include as many as 97 range countries. However, unlike the Global Tiger Forum, it will work towards the conservation of natural habitats of the lion, snow leopard, puma, jaguar and cheetah, along with the tiger.
- On the role of the alliance, the IBCA will facilitate the mobilisation of financial and technical resources for the overall ecosystem dealing with big cat species while implementing the conservation and protection agenda that has emerged from the experiences of other countries.
- PM quoted “Protection of wildlife is a universal issue. International Big Cat Alliance is our endeavour for the protection and conservation of the big cats,” “Together, we will save these species from extinction and create a safe and healthy ecosystem.”

➤ **The IBCA and translocation of big cats**

- The alliance will synergise and speed up efforts in the translocation of big cats. In 2022, eight cheetahs arrived in India from Namibia, seven decades after they became “functionally extinct” in the country.
- The ambitious project to reintroduce cheetahs in India was the first intercontinental transfer of wild cats into the country since Independence.
- In February 2023, 12 more cheetahs were translocated from South Africa.
- The government plans to translocate 12 big cats annually for the next eight to 10 years.
- After the translocation of cheetahs, the government expressed a desire to launch similar initiatives to move big cats. The Centre is already in talks with Cambodia, where the tiger was declared extinct in 2016 due to poaching and habitat loss.
- India, meanwhile, is home to over 3,000 tigers which is more than 75% of its global population, as per the latest government estimates. The tiger population was 1,411 in 2006, 1,706 in 2010, 2,226 in 2014, 2,967 in 2018 and 3,167 in 2022. While the latest data recorded a significant increase since 2018.

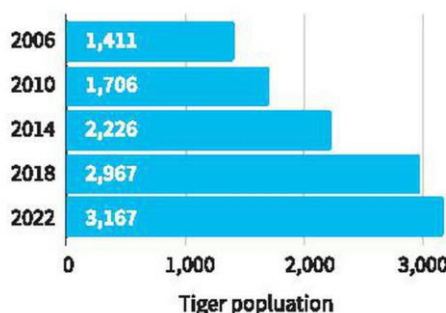
➤ **A look at the current status of these seven big cats:**

🇮🇳 **LION**

- (Status: Vulnerable)

**Big cat count**

According to the data released by the PM, the number of tigers in India increased by 200 in the past four years. A look at the tiger population

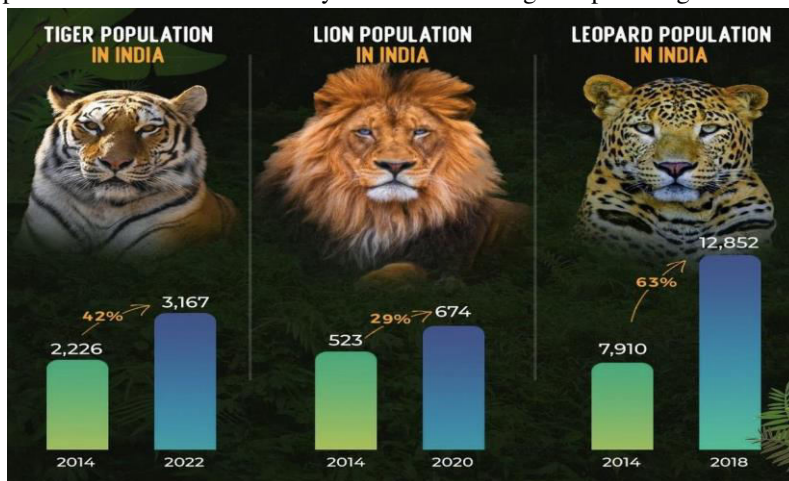


**Steady rise: A tiger at Van Vihar National Park in Bhopal on Sunday. PTI**

- **Population:** Although lions aren't endangered at present, population numbers could drop in the absence of proper conservation efforts. The IUCN estimates that 23,000-39,000 lions remain in the wild. However, data suggests that that number may be closer to 20,000, as their population is in decline. The total population of lions in India is around 700, as per 2020 estimates.
- **Range:** Previously, lions roamed throughout Africa and parts of Asia and Europe. The big cat is now found only in parts of sub-Saharan Africa, along with a critically endangered subpopulation in West Africa and a small population of Asiatic lions at the Gir National Park.
- **Threats:** There has been a significant decline in lion ranges due to land use and climate change. According to the World Wide Fund for Nature (WWF), lions currently inhabit only 8% of their former ranges, while the rest live out of protected areas. A 2019 study revealed that targeted poaching of lions accounted for 35% of known human-related lion killings.
- ✓ The Indian government launched the Asiatic Lion Project for long term conservation of the species.

**TIGER**

- (Endangered)
- **Population:** Around 3,700-5,000 tigers were living in the wild worldwide, as per a 2022 assessment by the International Union for Conservation of Nature (IUCN). As per WWF, tiger populations are stable or



Government data on population of tiger, lion and leopard in India.

- increasing in India, Nepal, Bhutan, Russia and China after years of decline.
- **Range:** Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Laos, Malaysia, Myanmar, Nepal, Russia, Thailand and Vietnam.
- **Threats:** Tigers have lost 95% of their historical range, according to the WWF. The use of land by humans for agriculture and development poses a serious risk to their habitat. Tigers need wide home ranges as they are territorial. Smaller habitats put them at a higher risk of poaching as they venture beyond protected areas to establish their territories.
- ✓ Climate change has emerged as another serious concern as rising sea levels threaten to wipe out forest areas. According to a WHO study, projected sea-level rise -- about a foot by 2070 -- could destroy nearly the entire Sundarbans habitat.
- ✓ Additionally, tiger 'farms' where the big cats are held captive for breeding and sale have emerged as a major obstacle to recovery and conservation efforts. More than 8,000 tigers are estimated to be held captive in East and Southeast Asia, as per the WWF.

**SNOW LEOPARD**

- (Vulnerable)
- **Population:** An estimated number of 4,000-6,500 snow leopards exist in the wild, with their population in decline, as per experts. In India, researchers estimate the total number to be between 400 and 700.
- **Range:** Their habitat range extends across the mountainous regions of 12 countries across Asia — Afghanistan, Bhutan, China, India, Kazakhstan, Kyrgyz Republic, Mongolia, Nepal, Pakistan, Russia, Tajikistan, and Uzbekistan.
- **Threats:** Besides the loss of natural habitat, snow leopards face the threat of poaching, a decline in natural prey species and retaliatory killings due to human-wildlife conflict. The snow leopard habitat range has declined due to climate change, human disturbances and increased use of grazing space.

**JAGUAR**

- (Near threatened)
- **Population:** As per WWF estimates, the global jaguar population is around 1,73,000.
- **Range:** Their population is distributed across 18 countries, with most of them in the Amazon rainforest and the Pantanal in South America. Brazil accounts for half of the wild jaguars in the world.
- **Threats:** Like tigers, jaguars need larger territories to survive. Besides fragmented habitats, deforestation and agricultural activities have resulted in a decline in their range. Estimates show that jaguars have already lost an approximately 50% of their historic range. Illegal hunting and trade have also played a role in their population decline.

**CHEETAH**

- (Vulnerable)
- **Population:** Cheetah numbers have declined from an estimated 15,000 in 1975 to less than 7,000. The species was declared extinct in India in 1952.
- **Range:** The big cat is endemic to the savannahs of Africa. Initially, they were found in Africa, India, Pakistan, Russia, Iran and the Middle East. Currently, the majority live in east and southern Africa.
- **Threats:** Cheetahs have reportedly lost 76% of their historic range in Africa. Besides the loss of habitat, the species suffers due to human-wildlife conflict, climate change, loss of prey and illegal trafficking.

**PUMA**

- (Near threatened)
- **Population:** The total breeding population of pumas is estimated at around 50,000 and is on a declining trend.
- **Range:** Also known as a mountain lion, the puma is found in habitats ranging Canada through the U.S. and Central and South America.
- **Threats:** The species faces threats of loss of habitat and prey, besides human-wildlife conflict.

**LEOPARD**

- (Near threatened)
- **Population:** Around 2,50,000 leopards exist globally, while their population is estimated at around 13,000 in India.
- **Range:** Africa, parts of the Middle East and Asia, including India and China.
- **Threats:** Like other big cat species, leopards globally face the threat of habitat loss, poaching for body parts and harm due to human intervention. In India, the biggest threat is an increasing conflict with humans. Several leopards have died due to road accidents in protected areas.

**ADMINISTRATIVE REFORM/GOVERNANCE**

❖ **The Inter-Services Organisations (Command, Control and Discipline) Bill, 2023**

➤ **CONTEXT:** Recently the government introduced a Bill which seeks to empower designated defence heads of inter-services organisations with certain administrative and disciplinary powers over all personnel serving in the command or attached to it.

- The Bill, 'The Inter-Services Organisations (Command, Control and Discipline) Bill, 2023', was tabled in the Lok Sabha by Minister of State for Defence Ajay Bhat during the recently concluded Budget Session.
- Inter-services organisations include soldiers from the Army, the Air Force and the Navy, like joint training institutes National Defence Academy, National Defence College (NDC), Defence Services Staff College (DSSC), and the Andaman and Nicobar Command (ANC).

➤ **The rationale behind the proposed law**

- At present, armed forces personnel are governed by the provisions of three separate laws for the three services — the Air Force Act, 1950, the Army Act, 1950, and the Navy Act, 1957. Only an officer of the same service holds disciplinary powers over persons governed by the respective Act. As far as inter-services organisations are concerned, this directly impacts command, control and discipline.
- Since the commander-in-chief of a joint services command and the officer-in-command of any other inter-services organisation are not empowered with disciplinary powers, any person accused of an offence has to be sent back to the parent service unit for any disciplinary or administrative action.
  - ✓ For example: if an Air Force officer commits an offence at the Defence Services Staff College, then the Academy Commandant (who is a three-star rank officer of the Indian Army) can't initiate action against said individual. Instead, the officer is repatriated to their parent Air Force unit, and action, if any, will follow under the Air Force Act, 1950.
- According to the bill existing framework is time-consuming and involves financial costs to move the personnel. Proceedings become even more cumbersome when the disciplinary or administrative proceedings arise from the same set of facts and circumstances but involve personnel belonging to different services.
  - ✓ As a result, multiple sets of proceedings under the respective Service Acts are required to be initiated, which impedes expeditious disposal of cases, thereby affecting the standard of discipline.
- The proposed legislation aims to address these impediments to ensure discipline is maintained and targets faster disposal of cases, which in turn is likely to save time and public money "without disturbing the unique service conditions or amending the service Acts."

➤ **What are the key provisions in the Bill?**

- While existing inter-services organisations will be deemed to have been constituted under the Bill, the proposed legislation seeks to empower the central government to set up an inter-services organisation by notification. This can include a joint services command — a key feature of the theaterisation plan of the armed forces — comprising units and personnel drawn from the three armed forces and persons of other forces attached to such a body. The commander-in-chief or the officer-in-command will be the head.



- The superintendence of the inter-services organisation will be vested in the Central Government, which “shall have the power to issue directions to each of such organisations, on any matters concerning national security or general administration, if it considers it necessary and expedient so to do in the public interest.”
- All disciplinary and administrative powers in terms of personnel serving or attached to an existing or a future inter-services organisation will lie with the commander-in-chief, the officer-in-command, or any other officer specially empowered by the central government.
- While serving in or attached to an inter-services organisation, personnel will continue to be governed by their respective service Acts.
- The Centre can notify any force or part of it, which has been raised and maintained in India under the authority of the Government, to which the Bill will apply.

The government expects the “enabling legislation” to pave the way for “tangible benefits” such as expeditious disposal of cases, saving of time and public money by avoiding multiple proceedings and greater integration amongst armed forces personnel.

➤ **How will it affect the tri-services theaterisation plan?**

- The Inter-Services Organisations (Command, Control and Discipline) Bill’s introduction in Parliament has come amid deliberations on the theatre command system that looks to integrate the capabilities of the three services.
- Each of the theatre commands will have units of the Army, the Navy and the Air Force, as per the plan, which has the mandate of the government.
- All the units will work as a single entity looking after security challenges in a specified geographical territory under an operational commander.
- The Bill holds the potential to ensure better management of theatre commands once they are operationalised. The difference in the rules of the service Acts when it comes to justice delivery for the same offence, however, can emerge as a cause for concern.

**SCIENCE AND TECHNOLOGY**

❖ **Why is a star-planet pair just 12 light-years away emitting radio signals?**

➤ **CONTEXT:** In October 2023, the constellation of Cetus in the evening sky, visible to the unaided eye, high above the horizon. It would also probably be looking in the general direction of an alien world called YZ Ceti b that has suddenly become the cynosure of astronomers.

- YZ Ceti b is a rocky, earth-sized exoplanet (a planet that orbits a star other than our sun) rotating around a small red dwarf star, YZ Ceti, barely 12 light-years from Earth, a handshake distance in astronomical terms.
- Astronomers are excited because they have detected a repeating radio signal from this exoplanet that suggests the presence of a magnetic field (one of the prerequisites for a habitable planet ) around it.

➤ **How was the discovery made?**

- The discovery was made by Jackie Villadsen from Bucknell University, Pennsylvania, and Sebastian Pineda from the University of Colorado, Boulder, using the Karl G. Jansky Very Large Array radio telescope in New Mexico.
- They had to make multiple rounds of observations before they could detect the radio signals from the star YZ Ceti, which seemed to match the orbital period of the planet YZ Ceti b. From this, they deduced that the signals were a result of the interaction between the planet’s magnetic field and the star.

➤ **Why does the magnetic field matter?**

- Just as energy surges from the sun sometimes disrupt telecommunications on earth and damage orbiting satellites, intense bursts of energy from the YZ Ceti star-exoplanet exchange produce spectacular auroral lights. Scientist sees this indirectly in the form of the radio emission we receive.
- These radio waves, strong enough to be picked up on earth, confirmed the existence of an exoplanetary magnetic field. Such signals can only be produced if the exoplanet orbits very close to its parent star and has its own magnetic field to influence the stellar wind and generate the signals.

➤ **What’s the implication for YZ Ceti b?**

- This is borne out by the small orbit of YZ Ceti b: the astronomers determined that the planet takes just a couple of earth days to circle its star. To compare, Mercury, which has the smallest planetary orbit in the solar system, takes a little under three earth-months to go around the sun.
- Since the mid-1990s, astronomers have found hundreds of planets orbiting stars similar to the sun, suggesting that planet formation in the universe’s galaxies is more common than scientists ever reckoned. Data from space-science missions such as Kepler, Gaia, and the James Webb space telescopes suggest the existence of possibly more than 300 billion planets in the Milky Way Galaxy alone.
- With scores of exoplanets in the Sun’s ‘neighbourhood’ itself, nearly half of all the stars visible in the sky could potentially harbour rocky, earth-sized planets in the habitable orbits around them. To have an atmosphere and sustain water, a planet has to be at a certain distance from its star (in orbits said to be in the star’s “Goldilocks zone”), or it will get burnt.

- Earth, for example, would have been a lot more like hot, harsh Venus if it had been just a little closer to the sun – or cold and barren like Mars if it had been any farther. Indeed, astronomers believe nearly 30% of all star-planet systems discovered could potentially have such “Goldilocks zones”.
- **How common are such magnetic fields?**
- With such overwhelming numbers, it always stood to reason that strong planetary magnetic fields should be common outside the solar system. Nevertheless, despite many of the larger exoplanets detected thus far being found to possess magnetic fields, planetary scientists have never been able to identify such fields on smaller, rocky exoplanets until now.
- ✓ If the latest findings are confirmed by further research, scientist would demonstrate the ability of the methodology to lead towards the magnetic characterisation of exoplanets.
- ✓ This is important because the survival of a planet’s atmosphere may well depend on its having, or not having, a strong magnetic field, since the field protects its atmosphere from being eroded by the charged particles blowing in from its star.
- ✓ Usually, planets this close to their stars are very hot and have likely had their atmospheres eroded away across the billions of years of history of the exoplanetary system.
- **What happens next?**
- Curiously, Mars orbiting the sun at a ‘safe’ distance, both Mars and Earth were very much alike billions of years ago, with a lot of water, warm oceans, rain and similar atmospheric systems. But in spite of this, life started on one planet while the other became dry and cold as the solar winds stripped it of most of its atmosphere.
- Longer-term monitoring is important to confirm these results and further investigate the properties of the radio signals.
- One thing is certain though: these findings will help astronomers learn more about the rocky netherworlds in the deepest reaches of space that run rings around their parent stars.

**ECONOMY**

- ❖ **The Foreign Exchange Management Act (FEMA)**
- **CONTEXT: Enforcement Directorate files case against BBC under Foreign Exchange Management Act**
- **About the Act**
- The proposal to replace FERA Act with Foreign Exchange Management Act (FEMA) was presented by the Vajpayee government in the budget of 1997-98, and it came into force on 1st June 2001.
- The rules and regulations related to forex transactions in India were simplified and liberalised under the FEMA to ensure better foreign cash flow.
- **Objectives of FEMA**
- The Foreign Exchange Management Act (1999) was created primarily to unify and update foreign exchange laws to facilitate international trade and payments and to support the orderly growth and upkeep of the Indian foreign exchange market.
- India as a whole is covered by FEMA. The statute also covers all branches, offices, and agencies owned or controlled by an Indian resident outside India.

| <b>Foreign Exchange Regulation Act (FERA)</b>                                    | <b>Foreign Exchange Management Act (FEMA)</b>  |
|--|--|
| The Foreign Exchange Regulation Act was passed by the Indian Parliament in 1973. | The Foreign Exchange Management Act (FEMA), which replaced FERA, was passed by the Indian Parliament on December 29, 1999. |
| FERA came into force on January 1, 1974.   | FEMA came into force in June 2000.   |
| FERA was repealed by the Vajpayee administration in 1998.                        | FEMA succeeded FERA  |
| FERA has 81 sections   | FEMA has 49 sections   |
| FERA was conceived with the notion that foreign exchange is a scarce resource.   | The idea that foreign exchange is an asset was there when FEMA was created.  |
| Foreign payments are governed under FERA guidelines.                             | The FEMA concentrated on boosting India's foreign exchange reserves and  |

|  |  |
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|  | encouraging overseas trade and payments.   |
| FERA's main goal was to save foreign exchange.   | FEMA's main goal is to manage foreign exchange.  |
| The term "authorized person" had a limited definition.   | The phrase "authorized person" was defined more broadly.   |
| Banking units were not considered "authorized persons" under the definition.   | Under the meaning of "authorized person," banking units fell.  |
| FERA rules were to be followed at all times, and any violations were punishable by law.                                    | A civil crime would be committed if FEMA regulations were broken.  |
| A FERA violation suspect was not given legal representation.   | Legal assistance will be given to anyone charged with breaking a FEMA rule.  |
| The appeals were submitted to the High Courts because there was no provision for a Tribunal.                               | A Special Director (Appeals) and Special Tribunal are provided.  |
| There was a direct punishment clause for individuals who broke the FERA guidelines.  | Those found guilty of breaking FEMA regulations must pay a fine beginning on the day of their conviction. The offender will be put in jail if the fine is not paid within 90 days. |
| The Reserve Bank of India (RBI) must first give its clearance before any money can be transferred for overseas operations. | There is no requirement for prior Reserve Bank of India authorisation for international commerce and remittances. (RBI).   |
| IT was not included in the budget.   | There is provision for IT.   |

**ANSWER WRITING**

**Q. Specify the reasons behind the loss of biodiversity at an alarming rate in recent years. What could be the potential impact of biodiversity loss on human health?**

According to Living Planet Report by the Worldwide Fund for Nature (WWF), in the last 50 years, there has been a 69 per cent decline in the wildlife populations of mammals, birds, amphibians, reptiles and fish globally. Researchers believe that Earth is witnessing its sixth mass extinction event and has termed it as 'biological annihilation'.

The main reasons behind the loss of biodiversity at an alarming rate in recent years are:

- **Changes in Land Use:** The degradation and conversion of forests to alternative land uses, such as agriculture is one of the leading causes of biodiversity loss, especially in the tropics. With a projected global population of 9.8 billion people by 2050, land utilized for agriculture is expected to increase. These land-use changes are one of the gravest threats to remaining biologically diverse habitats.
- **Habitat Fragmentation and destruction:** Factors such as the development of agricultural practices, reduced resources such as food, water, air quality, mining, pollution, and activities related to urbanization are leading to Habitat fragmentation.
- **Nutrient loading:** Over the past four decades, nutrient loading has emerged as one of the most important drivers of ecosystem change in terrestrial, freshwater, and coastal ecosystems. The increasing use of nitrogen and phosphorous fertilizers has resulted in the eutrophication of freshwater ecosystems and hypoxia in coastal marine ecosystems.
- **Role of Invasive Species:** Invasive alien species have been a major cause of extinction, especially on islands and in freshwater habitats. E.g.: 80% of the threatened species in the Fynbos biome of South Africa are endangered due to invasions by alien species.

- Natural disasters: Natural catastrophes such as volcanos, wildfires, floods, hurricanes, droughts, epidemics, tsunamis etc. also cause loss of biodiversity.
- Climate change: The risk of species extinction increases with every degree of warming. In the ocean, rising temperatures increase the risk of irreversible loss of marine and coastal ecosystems. E.g.: corals have nearly halved in the past 150 years.
- Overexploitation of resources: Overexploitation remains a serious threat to many species and populations. Among the most commonly overexploited species or groups of species are marine fish and invertebrates, trees, and animals hunted for meat.

How biodiversity loss can impact human health:

- Biodiversity is the basis for much-needed medicines: Natural compounds found in frogs, plants and many other species provide the basis for many of our medicines. E.g.: Paclitaxel, a drug used to treat cancer is derived from the bark of the Pacific yew tree. According to the UN's Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) around 70% of cancer medications are based on nature.
- Biodiversity provides for traditional medicines: An estimated 4 billion people still rely primarily on natural remedies to heal themselves e.g.: using latex from fig trees to treat intestinal parasites in the Amazon or neem oil to treat skin disorders in India. Loss of biodiversity can affect traditional medicine systems.
- Nutrition impact of biodiversity: Nutrition and biodiversity are linked at many levels. However, the introduction of crop varieties and cropping patterns that affect biodiversity can impact global nutritional status and human health.
- Impact on the future of drug discovery: Loss of species can further impact future drug discovery as it could lead to loss of molecules on which researches are yet to be done.
- Rise in infectious diseases: Human activities are disturbing both the structure and functions of ecosystems and altering native biodiversity. Patterns of infectious diseases are sensitive to these disturbances.

Human health and planetary health are intricately intertwined hence, it is the responsibility of mankind to save the planet and take some crucial steps to prevent the loss of biodiversity. The key targets agreed upon at COP 15 and SDG goals 14 and 15 must be implemented to protect biodiversity.

#### MCQs

- Which one of the following statements is correct with reference to FEMA in India?
  - The Foreign Exchange Regulating Act (FERA) was replaced by Foreign Exchange Management Act (FEMA) in the year 2001.
  - Under FEMA, violation of foreign exchange rules has ceased to be a criminal offence.**
  - As per the new dispensation, Enforcement Directorate can arrest and prosecute the people for violation of foreign exchange rule.
  - FERA was given a sunset clause of one year till 31st May, 2002 to enable enforcement directorate to complete the inrenttigation of pending issues.
- The term 'Goldilocks Zone' is often seen in the news in the context of
  - The limits of habitable zone above the surface of the Earth
  - Regions inside the Earth where shale gas is available
  - Search for the Earth-like planets in outer space**
  - Search for meteorites containing precious metals
- With reference to Global Tiger Forum consider the following
  - It is an Inter-governmental international body working exclusively for the conservation of Tigers in the wild.
  - All the tiger range countries are member of the forum
  - UK is the only non Tiger range member country.

Choose the correct statement/s using the codes given below

  - 1 and 3 only**
  - 1 and 2 only
  - 1,2 and 3
  - 2 and 3 only
- Integrated Tiger Habitat Conservation Program is an Initiative of which of the following?
  - Global Tiger Forum
  - International Union for Conservation of Nature**
  - Government of India
  - UNEP
- If a major solar storm (solar flare) reaches the Earth, which of the following are the possible effects on the Earth?
  - GPS and navigation systems could fail.
  - Tsunamis could occur at equatorial regions.
  - Power grids could be damaged.

4. Intense auroras could occur over much of the Earth.
5. Forest fires could take place over much of the planet.
6. Orbits of the satellites could be disturbed.
7. Shortwave radio communication of the aircraft flying over polar regions could be interrupted.

Select the correct answer using the code given below:

- a) 1, 2, 4 and 5 only
  - b) 2, 3, 5, 6 and 7 only
  - c) **1, 3, 4, 6 and 7 only**
  - d) 1, 2, 3, 4, 5, 6 and 7
6. Jeevan Reddy committee recently seen in news is related to which of the following?
- a) Poverty
  - b) National Income calculation
  - c) **Electoral Reform**
  - d) Policing Reform
7. A stretch of the beach at Bheemili near Visakhapatnam glows due to a phenomenon called bioluminescence, with reference to it consider the following
1. Bioluminescence occurs due to the presence of single-celled organisms called dinoflagellates that produce light when they are disturbed
  2. Most bioluminescent organisms are found in the ocean.
  3. Bioluminescent is widespread among deep sea animals in general.

Which of the above statement/s is/are correct?

- a) 1 and 2 only
  - b) 2 and 3 only
  - c) 1 and 3 only
  - d) **1,2 and 3**
8. A recent study on highlighted Zero Budget Natural Farming (ZBNF) in andhra pradesh (ap) yielded more produce than conventional methods,with reference to it consider the following
1. It is natural farming technique in which farming is done without use of chemicals and without using any credits or spending any money on purchased inputs.
  2. It was originally promoted by Maharashtrian agriculturist Subhash Palekar.

Which of the above statement/s is/are correct?

- a) 1 only
  - b) 2 only
  - c) **Both 1 and 2**
  - d) Neither 1 nor 2
9. Ranganath Mishra Commission often mentioned in news is related to which of the following
- a) **Religious and Linguistic Minorities**
  - b) Women and Child Development
  - c) Self Help Group
  - d) Centre State relation
10. With reference to Intergovernmental Negotiating Body (INB) consider the following
1. INB was established by World Health Assembly in 2021.
  2. India is not a party to it.

Which of the above statement/s is/are correct?

- a) **1 only**
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2